3. (Amended) The composition of claim 1 wherein said locking sequences form a triplex anchor.

4. (Amended) The composition of claim 1 wherein said locking sequences form a quadruplex anchor.

5. (Amended) The composition of claim 1 wherein said locking sequences form a Z-DNA anchor.

7. (Amended) The composition of claim 1 wherein said locking sequences form an A-DNA anchor.

8. (Amended) The composition of claim 1 wherein said locking sequences comprise RNA.

9. (Amended) The composition of claim 1 wherein said locking sequences comprise DNA.

10. (Amended) The composition of claim 1 wherein at one of said targeting polynucleotides comprises a peptide nucleic acid.

11. (Amended) The composition of claim 1 wherein said locking sequences comprise DNA and RNA.

14. (Amended) The composition of Claim 13 wherein said RecA protein species is *E. coli* RecA.

21. (Amended) The composition of claim 18 wherein said substituent is selected from the group consisting of intercalators, cross-linking moieties, labels, photoactive moieties, nucleic acid scission inducing moieties, purification tag moieties, and nucleic acid modification moieties.

22. (Amended) A composition comprising at least one recombinase and a double D-loop comprising a target nucleic acid and two substantially complementary single stranded targeting polynucleotides, each comprising:

a) at least one homology clamp that substantially corresponds to or is substantially complementary to a preselected target nucleic acid and to each other; and

b) at least one locking sequence.

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23. (Amended) The composition of claim 22 further comprising a secondary probe, wherein said probe is substantially complementary to at least one of said locking sequences.

24. (Amended) The composition of claim 22 wherein said locking sequences form a triplex anchor.

25. (Amended) The composition of claim 22 wherein said locking sequences form a quadruplex anchor.

26. (Amended) The composition of claim 22 wherein said locking sequences form a Z-DNA anchor.

28. (Amended) The composition of claim 22 wherein said locking sequences form an A-DNA anchor.

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29. (Amended) The composition of claim 22 wherein said locking sequences comprise RNA.

30. (Amended) The composition of claim 22 wherein said locking sequences comprise DNA.

31. (Amended) The composition of claim 22 wherein at least one of said targeting polynucleotides comprises a peptide nucleic acid.

32. (Amended) The composition of claim 22 wherein said locking sequences comprise DNA and RNA.

35. (Amended) The composition of Claim 34, wherein said prokaryotic RecA protein is *E. coli* RecA.

39. (Amended) The composition of claim 22 wherein at least one of said single stranded nucleic acids comprises at least one substituent.

42. (Amended) The composition of claim 40 wherein said substituent is selected from the group consisting of intercalators, cross-linking moieties, labels, photoactive moieties, nucleic acid scission inducing moieties, purification tag moieties, and nucleic acid modification moieties.

43. (Amended) A composition comprising at least one recombinase and a double D-loop comprising a target nucleic acid and a single stranded targeting polynucleotides comprising a first homology clamp that substantially corresponds to a preselected target nucleic acid sequence, a second homology clamp that is substantially complementary to said preselected target nucleic acid sequence, and at least one locking sequence.

44. (Amended) The composition of claim 43 further comprising a secondary probe, wherein said probe is substantially complementary to at least one of forms a lock structure with said locking sequences.

45. (Amended) The composition of claim 43 wherein said locking sequences form a triplex anchor.

46. (Amended) The composition of claim 43 wherein said locking sequences form a quadruplex anchor.

47. (Amended) The composition of claim 43 wherein said locking sequences form a Z-DNA anchor.

49. (Amended) The composition of claim 43 wherein said locking sequences form an A-DNA anchor.

50. (Amended) The composition of claim 43 wherein said locking sequences comprise RNA.

51. (Amended) The composition of claim 43 wherein said locking sequences comprise DNA.

52. (Amended) The composition of claim 43 wherein at least one of said targeting polynucleotides comprises a peptide nucleic acid.

53. (Amended) The composition of claim 43 wherein said locking sequences comprise DNA and RNA.

60. (Amended) The composition of claim 43 wherein at least one of said single stranded nucleic acids comprises at least one substituent.

63. (Amended) The composition of claim 60 wherein said substituent is selected from the group consisting of intercalators, cross-linking moieties, labels, photoactive moieties, nucleic acid scission inducing moieties, purification tag moieties, and nucleic acid modification moieties.

64. (Amended) A cell comprising a composition selected from claims 1, 20, or 43.

108. (Amended) A kit comprising at least one recombinase and two substantially complementary single stranded targeting polynucleotides, each comprising

a) at least one homology clamp that substantially corresponds to or is substantially complementary to a preselected target nucleic acid sequence; and

b) at least one locking sequence.

112. (Amended) A composition comprising a double D-loop comprising a target nucleic acid and two substantially complementary single stranded targeting polynucleotides, each comprising.

i) at least one homology clamp that substantially corresponds to or is substantially complementary to a preselected target nucleic acid sequence of said target nucleic acid and to each other;

ii) at least one locking sequence; wherein said locking sequence forms a lock and a protein binds to said lock.

REMARKS

Claims 1-66, 108 and 112 are pending in the instant application.

Claims 10, 14, 18-21, 31, 33-42, 52 and 54-64 stand rejected under 35 U.S.C.§112, second paragraph, as being indefinite; Claims 1, 6, 8, 9-21, 22, 27, 29-42, 43, 48, 50-66 and 108 stand rejected under 35 U.S.C.§ 102(e) as being anticipated by U.S. Pat. No. 5,948,653 to Pati *et al.* ("Pati *et al.*"); Claims 1, 6, 7, 12-14, 18-22, 27, 30, 33-35, 39-42 stand rejected under 35 U.S.C. §102 (b) as being anticipated by U.S. Pat. No. 5,273,881 to Sena *et al.* ("Sena *et al.*"); Claim 112 stands rejected under 35 U.S.C. §103(a) as being obvious over Pati *et al.*; Claims 1-3, 6, 8, 9-21, 22-24, 27, 29-42, 43-45, 48, 50-66 and 108 stand rejected under 35 U.S.C. §103 (a) as being obvious over Pati *et al.*, as applied under 35 U.S.C. §102(b), in further in view of Helene *et al.*, Biochimica et Biophysica Acta (1990) 1049:99-125 ("Helene *et al.*"); Claims 1, 5-8, 9-21, 22, 26-42, 43, 47-66 and 108 stand rejected under 35 U.S.C. §103(a) as being over Pati *et al.*, as applied under 35 U.S.C. §102(b), in further in view of U.S. Pat. No. 5,225,556 to Barton ("Barton"); Claims 1, 4, 6, 8, 9-21, 22, 25, 27, 29-42, 43, 46, 48, 50-66 and 108 stand rejected under 35 U.S.C. §103 (a) as being obvious over Pati *et al.*, as applied under 35 U.S.C. §102(b), in further in view of Simonsson *et al.*, Nucleic Acid Research (1998) 26: 1167-1172 ("Simonsson *et al.*").

The claims have been amended to claim with more particularity that which Applicants consider the invention. None of these amendments have been made with the intention or the result of narrowing the claimed subject matter, but rather simply to refine the description of